GRANT SUMMARY

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Use the tab and arrow keys to move through the form. If field is not applicable, please put N/A in field.

Date filled out: 1/16/06

Grant Information: Please use complete phrases/sentences. Fields will expand as you type.

1. **Grant Agreement Number:** 04-176-555-0
2. **Project Title:** Evaluation of Groundwater Nitrate and Organic Carbon Inputs to the Lower San Joaquin River and Their Sources
3. **Project Purpose - Problem Being Addressed:** The goal of this study is to quantify nitrate and DOC in ground-water accretions and determine the source/loads of these constituents over a 59 river mile reach from the confluence of Salt Slough to the new California Department of Water Resources (DWR) water quality sampling site in the San Joaquin River (SJR) near Vernalis. Specific objectives are to: (i) quantify the importance of ground-water accretion to flow in the lower SJR, (ii) quantify the contribution of nitrate and DOC from ground-water accretions, and (iii) attempt to determine the source of the nitrate and DOC originating from ground waters. The overarching desired outcome is to determine the importance of ground water with respect to surface water quantity and quality in the lower SJR.
4. **Project Goals**
   a. **Short-term Goals:**
   1. A longitudinal boat reconnaissance will allow us to extrapolate the results from the monitoring-well and synoptic sites to the entire 59 mile study reach by identifying locations of ground water "hot spots". In addition, geochemical, isotopic and optical characteristics of the ground water will be compared to various end-members to identify the sources of nitrate in the ground-water accretions.
   2. Nested wells located at six sites along the river will provide data that will allow for the modeling of ground-water flow rates and their associated nitrate and DOC loads to surface waters of the SJR. The rate of ground-water inflow to the river will be estimated using two numerical methods: simulation of vertical flow and energy (heat) transport beneath the streambed and simulation of two-dimensional ground-water flow along the transects.
   3. Information from about 30 synoptic sites along the study reach will provide data on hydraulic gradients and ground-water quality between the permanent nested-well sites. The desired outcome of this approach is to fill spatial gaps for water quality and hydrologic data and to allow extrapolation of results from the other two approaches.
   b. **Long-term Goals:** Our long-term goal is to determine the importance of ground water with respect to surface water quantity and quality in the lower San Joaquin River.
5. **Project Location:** (lat/longs, watershed, etc.) The 59 river mile reach of the San Joaquin River from the confluence of Salt Slough to the new California Department of Water Resources (DWR) water quality sampling site near Vernalis.
   a. **Physical Size of Project:** (miles, acres, sq. ft., etc.) 59 river miles
   b. **Counties Included in the Project:** Merced, Stanislaus San Joaquin